

SEQUENCE LISTING

<110> Veldman, Geertruda M.

<120> NEUTRALIZING ANTIBODIES AGAINST GDF-8 AND USES THEREFOR

<130> 08702.6020-00000

<160> 54

<170> PatentIn version 3.1

<210> 1

<211> 786

<212> DNA

<213> Homo sapiens

<400> 1
gaggtgcagc tgttggagtc tgggggaggc ttggtacagc ctgggggggtc cctgagactc 60
tcttgtgcag cctctggatt caccttttagc agctatgcc a tgagctgggt ccgccaggct 120
ccaggggaagg ggctggagtg ggtctcagct attagtggta gtggtggtag cacatactac 180
gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatac acagcctgag agccgaggac acggccgtgt attactgtga gagaatgggg 300
ccctgtactg gtggaagctg ctacgacacc cttggcaact ggggccgggg caccctggtc 360
accgtctcga gtggaggcgg cggttcaggc ggaggtggct ctggcggtgg cggaagtgca 420
cagtctgtgc tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc 480
tcttgacttg ggagcagctc caacatcggg gcagggttatg atgtacactg gtaccagcaa 540
cttcaggcg cgcccccaa actcctcatc aggggtaatg gcaatcggcc ctcaggggtc 600
cctgaccgat tctctgtctc caagtctggc tactcagcct ccctggccat cactgggctg 660
cagcctgccg atgaggggtg ttattactgc cagtcctatg acagcagtct gagtgggttcg 720

aaggtgttcg gccaaaggac caagctgacc gtcttaggtg cggccgcaca tcatcatcac 780
catcac 786

<210> 2

<211> 262

<212> PRT

<213> Homo sapiens

<400> 2

Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Glu Arg Met Gly Pro Cys Thr Gly Gly Ser Cys Tyr Asp Thr Leu Gly
100 105 110

Asn Trp Gly Arg Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly
115 120 125

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ala Gln Ser Val Leu
130 135 140

Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln Arg Val Thr Ile
145 150 155 160

Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly Tyr Asp Val His
165 170 175

Trp Tyr Gln Gln Leu Pro Gly Ala Ala Pro Lys Leu Leu Ile Arg Gly
180 185 190

Asn Gly Asn Arg Pro Ser Gly Val Pro Asp Arg Phe Ser Val Ser Lys
195 200 205

Ser Gly Tyr Ser Ala Ser Leu Ala Ile Thr Gly Leu Gln Pro Ala Asp
210 215 220

Glu Gly Val Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser Leu Ser Gly Ser
225 230 235 240

Lys Val Phe Gly Gln Gly Thr Lys Leu Thr Val Leu Gly Ala Ala Ala
245 250 255

His His His His His His
260

<210> 3

<211> 372

<212> DNA

<213> Homo sapiens

<400> 3

gaggtgcagc tggttgagtc tgggggaggc ttggtacagc ctgggggggtc cctgagactc	60
tcctgtgcag cctctggatt caccttttagc agctatgcca tgagctgggt ccgccaggct	120
ccaggaagg ggctggagtg ggtctcagct attagtggta gtggtggtag cacatactac	180
gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa cacgctgtat	240
ctgcaaatga acagcctgag agccgaggac acggccgtgt attactgtga gagaatgggg	300
ccctgtactg gtggaagctg ctacgacacc cttggcaact ggggccgggg caccctgggtc	360
accgtctcga gt	372

<210> 4

<211> 124

<212> PRT

<213> Homo sapiens

<400> 4

Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Glu Arg Met Gly Pro Cys Thr Gly Gly Ser Cys Tyr Asp Thr Leu Gly
100 105 110

Asn Trp Gly Arg Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 5

<211> 336

<212> DNA

<213> Homo sapiens

<400> 5

cagtctgtgc tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc 60

tcctgcactg ggagcagctc caacatcggg gcagggttatg atgtacactg gtaccagcaa 120

cttccaggcg cggcccccaa actctctcatc aggggtaatg gcaatcggcc ctcaggggtc 180
 cctgaccgat tctctgtctc caagtctggc tactcagcct ccttggccat cactgggctg 240
 cagcctgccg atgaggggtgt ttattactgc cagtcctatg acagcagtct gagtggttcg 300
 aaggtgttcg gccaaaggac caagctgacc gtccta 336

<210> 6

<211> 112

<212> PRT

<213> Homo sapiens

<400> 6

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
 1 5 10 15

Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly
 20 25 30

Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Ala Ala Pro Lys Leu
 35 40 45

Leu Ile Arg Gly Asn Gly Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
 50 55 60

Ser Val Ser Lys Ser Gly Tyr Ser Ala Ser Leu Ala Ile Thr Gly Leu
 65 70 75 80

Gln Pro Ala Asp Glu Gly Val Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser
 85 90 95

Leu Ser Gly Ser Lys Val Phe Gly Gln Gly Thr Lys Leu Thr Val Leu
 100 105 110

<210> 7

<211> 774

<212> DNA

<213> Homo sapiens

<400> 7
caggtcacct tgaaggagtc tgggggaggc ttggtacagc ctgggggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttagt agatatgtca tcaactgggt ccgccaggct 120
ccaggggaagg ggctggaatg ggtctcagct attagtgtta ctggtggttag cacggcctac 180
gcagactccg tgagggggccg gttcaccatc tccagagaca attccaagaa cacgctgtat 240
ttgcaaata atagcctgag agccgaggac acggccgtat attactgtac gaaaggacag 300
tgggaacggg gaagttacta ctttgactac tggggccggg gaaccctggt caccgtctcg 360
agtggaggcg gcggttcagg cggagggtggc tctggcgggtg gcggaagtgc acagtctgtg 420
ctgacgcagc cgccctcagt gtctggggcc ccagggcaga gggtcaccat ctctgcact 480
gggagcagct ccaacatcgg ggacgggttat gatgtacact ggtatcagca gcttccagga 540
acagccccc aactcctcat ctatggtaac agtcacggc cctcaggggt cctgaccga 600
ttctctggct ccaagtctga cacctctgcc tccctggcca tcaactgggt ccagggtgag 660
gatgaggtcg attatttctg ccactcctat gacggcagtg tgagtggctg gattttcggc 720
ggagggacca agctgaccgt cctaggtgcg gccgcacatc atcatcacca tcac 774

<210> 8
<211> 258
<212> PRT
<213> Homo sapiens

<400> 8
Gln Val Thr Leu Lys Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Arg Tyr
20 25 30
Val Ile Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Ala Ile Ser Val Thr Gly Gly Ser Thr Ala Tyr Ala Asp Ser Val
50 55 60

Arg Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Thr Lys Gly Gln Trp Glu Arg Gly Ser Tyr Tyr Phe Asp Tyr Trp Gly
100 105 110

Arg Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
115 120 125

Gly Gly Ser Gly Gly Gly Gly Ser Ala Gln Ser Val Leu Thr Gln Pro
130 135 140

Pro Ser Val Ser Gly Ala Pro Gly Gln Arg Val Thr Ile Ser Cys Thr
145 150 155 160

Gly Ser Ser Ser Asn Ile Gly Asp Gly Tyr Asp Val His Trp Tyr Gln
165 170 175

Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr Gly Asn Ser His
180 185 190

Arg Pro Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Lys Ser Asp Thr
195 200 205

Ser Ala Ser Leu Ala Ile Thr Gly Leu Gln Val Glu Asp Glu Ala Asp
210 215 220

Tyr Phe Cys His Ser Tyr Asp Gly Ser Val Ser Gly Trp Ile Phe Gly
225 230 235 240

Gly Gly Thr Lys Leu Thr Val Leu Gly Ala Ala Ala His His His His
245 250 255

His His

<210> 9

<211> 363

<212> DNA

<213> Homo sapiens

<400> 9

```

caggtcacct tgaaggagtc tgggggaggc ttggtacagc ctgggggggc cctgagactc      60
tctgtgcag cctctggatt cacctttagt agatatgtca tcaactgggt ccgccaggct      120
ccaggaagg ggctggaatg ggtctcagct attagtgtta ctggtggtag caccgcctac      180
gcagactccg tgagggggccg gttcaccatc tccagagaca attccaagaa caccgtgtat      240
ttgcaaatga atagcctgag agccgaggac acggccgtat attactgtac gaaaggacag      300
tgggaacggg gaagttacta ctttgactac tggggccggg gaaccctggt caccgtctcg      360
agt                                                                    363

```

<210> 10

<211> 121

<212> PRT

<213> Homo sapiens

<400> 10

```

Gln Val Thr Leu Lys Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1           5           10           15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Arg Tyr
20           25           30

Val Ile Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35           40           45

Ser Ala Ile Ser Val Thr Gly Gly Ser Thr Ala Tyr Ala Asp Ser Val
50           55           60

Arg Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65           70           75           80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85           90           95

```


Thr Lys Gly Gln Trp Glu Arg Gly Ser Tyr Tyr Phe Asp Tyr Trp Gly
 100 105 110

Arg Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 11

<211> 336

<212> DNA

<213> Homo sapiens

<400> 11
 cagtctgtgc tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc 60
 tcctgcactg ggagcagctc caacatcggg gacgggttatg atgtacactg gtatcagcag 120
 cttccaggaa cagcccccaa actcctcacc tatggtaaca gtcacatcgcc ctcaggggtc 180
 cctgaccgat tctctggctc caagtctgac acctctgcct ccctggccat cactgggctc 240
 caggttgagg atgaggctga ttatttctgc cactcctatg acggcagtggt gaggggctgg 300
 attttcggcg gagggaccaa gctgaccgtc ctaggt 336

<210> 12

<211> 111

<212> PRT

<213> Homo sapiens

<400> 12

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
 1 5 10 15

Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Asp Gly
 20 25 30

Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu
 35 40 45

Leu Ile Tyr Gly Asn Ser His Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Asp Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65 70 75 80

Gln Val Glu Asp Glu Ala Asp Tyr Phe Cys His Ser Tyr Asp Gly Ser
85 90 95

Val Ser Gly Trp Ile Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 13

<211> 747

<212> DNA

<213> Homo sapiens

<400> 13

caggtgcagc tgggtgcaatc tggggctgag gtgaagaagc ctggggcctc agtgaaggtt 60
tcctgcaagg catctggata caccttcacc agctactata tgcactgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggaata atcaacccta gtggtggtag cacaagctac 180
gcacagaagt tccagggcag agtcaccatg accagggaca cgtccacgag cacagtctac 240
atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gagagacgag 300
aactgggggt tcgaccctg gggccaggga accctgggtca ccgtctcgag tggaggcggc 360
ggttcaggcg gaggtggctc tggcggtggc ggaagtgcac tttcctatga gctgactcag 420
ccaccctcag tgtccgtgtc tccaggacag acagccacca ttacctgtc tggacatgca 480
ctgggggaca aatttgtttc ctggtatcag cagggatcag gccagtcctc tgtattggtc 540
atctatgacg ataccagcg gccctcaggg atccctgggc gattctctgg ctccaactct 600
gggaacacag ccaactctgac catcagcggg acccaggcta tggatgaggc tgactatattt 660
tgtcaggcgt gggacagcag cttcgtattc ggcggaggga ccaaggtcac cgtcctaggt 720
gcggccgcac atcatcatca ccatcac 747

<210> 14

<211> 249

<212> PRT

<213> Homo sapiens

<400> 14

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Ile Ile Asn Pro Ser Gly Gly Ser Thr Ser Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Glu Asn Trp Gly Phe Asp Pro Trp Gly Gln Gly Thr Leu
100 105 110

Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
115 120 125

Gly Gly Gly Ser Ala Leu Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val
130 135 140

Ser Val Ser Pro Gly Gln Thr Ala Thr Ile Thr Cys Ser Gly His Ala
145 150 155 160

Leu Gly Asp Lys Phe Val Ser Trp Tyr Gln Gln Gly Ser Gly Gln Ser
165 170 175

Pro Val Leu Val Ile Tyr Asp Asp Thr Gln Arg Pro Ser Gly Ile Pro
180 185 190

Gly Arg Phe Ser Gly Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile
195 200 205

Ser Gly Thr Gln Ala Met Asp Glu Ala Asp Tyr Phe Cys Gln Ala Trp
210 215 220

Asp Ser Ser Phe Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu Gly
225 230 235 240

Ala Ala Ala His His His His His His
245

<210> 15

<211> 351

<212> DNA

<213> Homo sapiens

<400> 15

caggtgcagc tgggtgcaatc tggggctgag gtgaagaagc ctggggcctc agtgaaggtt 60
tcttgcaagg catctggata caccttcacc agctactata tgcactgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggaata atcaacccta gtggtggtag cacaagctac 180
gcacagaagt tccagggcag agtcaccatg accagggaca cgtccacgag cacagtctac 240
atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gagagacgag 300
aactgggggt tcgaccctg gggccaggga accctgggtca ccgtctcgag t 351

<210> 16

<211> 117

<212> PRT

<213> Homo sapiens

<400> 16

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Ile Ile Asn Pro Ser Gly Gly Ser Thr Ser Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Glu Asn Trp Gly Phe Asp Pro Trp Gly Gln Gly Thr Leu
100 105 110

Val Thr Val Ser Ser
115

<210> 17

<211> 315

<212> DNA

<213> Homo sapiens

<400> 17

tcctatgagc tgactcagcc accctcagtg tccgtgtctc caggacagac agccaccatt 60

acctgctctg gacatgcact gggggacaaa tttgtttcct ggtatcagca gggatcaggc 120

cagtcccttg tattggtcat ctatgacgat acccagcggc cctcagggat ccctgggcca 180

ttctctggct ccaactctgg gaacacagcc actctgacca tcagcgggac ccaggctatg 240

gatgaggctg actatTTTTg tcaggcgtgg gacagcagct tcgtattcgg cggagggacc 300

aaggtcaccg tccta 315

<210> 18

<211> 105

<212> PRT

<213> Homo sapiens

<400> 18

Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln
1 5 10 15

Thr Ala Thr Ile Thr Cys Ser Gly His Ala Leu Gly Asp Lys Phe Val
20 25 30

Ser Trp Tyr Gln Gln Gly Ser Gly Gln Ser Pro Val Leu Val Ile Tyr
35 40 45

Asp Asp Thr Gln Arg Pro Ser Gly Ile Pro Gly Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met
65 70 75 80

Asp Glu Ala Asp Tyr Phe Cys Gln Ala Trp Asp Ser Ser Phe Val Phe
85 90 95

Gly Gly Gly Thr Lys Val Thr Val Leu
100 105

<210> 19

<211> 774

<212> DNA

<213> Homo sapiens

<400> 19

gaggtccagt tggttgagtc tgggggaggc ttggtacagc ctgggggggtc cctgagactc 60
tctgtgcag cctctggatt cacctttagt agatatgtca tcaactgggt ccgccaggct 120
ccaggaagg ggctggaatg ggtctcagct attagtgtta ctggtggtag cacggcctac 180
gcagactccg tgagggggccg gttcaccatc tccagagaca attccaagaa cacgctgtat 240
ttgcaaata atagcctgag agccgaggac acggccgtat attactgtgc gaaaggacag 300

tgggaacggg gaagttacta ctttgactac tggggccggg gaaccctggt caccgtctcg 360
 agtggaggcg gcggttcagg cggaggtggc tctggcggcg gcggaagtgc acagtctgtg 420
 ctgacgcagc cgccctcagt gtctggggcc ccagggcaga gggtcacat ctctgcact 480
 gggagcagct ccaacatcgg ggacgggttat gatgtacact ggtatcagca gcttcagga 540
 acagccccc aactcctcat ctatggtaac agtcacggc cctcaggggt cctgaccga 600
 ttctctggct ccaagtctgg tacctctgcc tccctggcca tcaactgggt ccaggctgag 660
 gatgaggctg attattactg ccactcctat gacggcagtg tgagtggctg gattttcggc 720
 ggagggacca agctgaccgt cctaggtgcg gccgcacatc atcatcacca tcac 774

<210> 20

<211> 258

<212> PRT

<213> Homo sapiens

<400> 20

Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Arg Tyr
 20 25 30

Val Ile Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45

Ser Ala Ile Ser Val Thr Gly Gly Ser Thr Ala Tyr Ala Asp Ser Val
 50 55 60

Arg Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

Ala Lys Gly Gln Trp Glu Arg Gly Ser Tyr Tyr Phe Asp Tyr Trp Gly
 100 105 110

Arg Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
115 120 125

Gly Gly Ser Gly Gly Gly Gly Ser Ala Gln Ser Val Leu Thr Gln Pro
130 135 140

Pro Ser Val Ser Gly Ala Pro Gly Gln Arg Val Thr Ile Ser Cys Thr
145 150 155 160

Gly Ser Ser Ser Asn Ile Gly Asp Gly Tyr Asp Val His Trp Tyr Gln
165 170 175

Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr Gly Asn Ser His
180 185 190

Arg Pro Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Lys Ser Gly Thr
195 200 205

Ser Ala Ser Leu Ala Ile Thr Gly Leu Gln Ala Glu Asp Glu Ala Asp
210 215 220

Tyr Tyr Cys His Ser Tyr Asp Gly Ser Val Ser Gly Trp Ile Phe Gly
225 230 235 240

Gly Gly Thr Lys Leu Thr Val Leu Gly Ala Ala Ala His His His His
245 250 255

His His

<210> 21

<211> 363

<212> DNA

<213> Homo sapiens

<400> 21

gaggtccagt tggtggagtc tgggggaggc ttggtacagc ctgggggggtc cctgagactc 60

tcctgtgcag cctctggatt cacctttagt agatatgtca tcaactgggt ccgccaggct 120

ccaggaagg ggctggaatg ggtctcagct attagtgtta ctggtggtag cacggcctac 180

gcagactccg tgaggggccc gttcaccatc tccagagaca attccaagaa cacgctgtat 240
 ttgcaaata atagcctgag agccgaggac acggccgtat attactgtgc gaaaggacag 300
 tgggaacggg gaagttacta ctttgactac tggggccggg gaaccctggt caccgtctcg 360
 agt 363

<210> 22

<211> 121

<212> PRT

<213> Homo sapiens

<400> 22

Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Arg Tyr
 20 25 30

Val Ile Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45

Ser Ala Ile Ser Val Thr Gly Gly Ser Thr Ala Tyr Ala Asp Ser Val
 50 55 60

Arg Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

Ala Lys Gly Gln Trp Glu Arg Gly Ser Tyr Tyr Phe Asp Tyr Trp Gly
 100 105 110

Arg Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 23

<211> 333

<212> DNA

<213> Homo sapiens

<400> 23

```

cagtctgtgc tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc      60
tcttgactg ggagcagctc caacatcggg gacgggtatg atgtacactg gtatcagcag      120
cttcaggaa cagcccccaa actcctcatc tatggtaaca gtcacggcc ctcaggggtc      180
cctgaccgat tctctggctc caagtctggt acctctgcct ccctggccat cactgggctc      240
caggctgagg atgaggctga ttattactgc cactcctatg acggcagtgt gagtggctgg      300
attttcggcg gagggaccaa gctgaccgtc cta                                     333

```

<210> 24

<211> 111

<212> PRT

<213> Homo sapiens

<400> 24

```

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
1           5           10          15

Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Asp Gly
      20           25           30

Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu
      35           40           45

Leu Ile Tyr Gly Asn Ser His Arg Pro Ser Gly Val Pro Asp Arg Phe
      50           55           60

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65           70           75           80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys His Ser Tyr Asp Gly Ser
      85           90           95

Val Ser Gly Trp Ile Phe Gly Gly Gly Thr Lys Leu Thr Val Leu

```

	100	105	110	
<210>	25			
<211>	747			
<212>	DNA			
<213>	Homo sapiens			
<400>	25			
caggtgcagc	tggtgcaatc	tggggctgag	gtgaagaagc	ctggggcctc agtgaaggtt 60
tcctgcaagg	catctggata	caccttcacc	agctactata	tgcactgggt gcgacaggcc 120
cctggacaag	ggcttgagtg	gatgggaata	atcaacccta	gtggtggtag cacaagctac 180
gcacagaagt	tccagggcag	agtcaccatg	accagggaca	cgtccacgag cacagtctac 240
atggagctga	gcagcctgag	atctgaggac	acggccgtgt	attactgtgc gagagacgag 300
aactgggggt	tcgaccctg	gggccaggga	accctgggtca	ccgtctcgag tggaggcggc 360
ggttcaggcg	gaggtggctc	tggcggtggc	ggaagtgcac	tttcctatga gctgactcag 420
ccaccctcag	tgctcgtgtc	tccaggacag	acagccagca	ttacctgctc tggacatgca 480
ctgggggaca	aatttgtttc	ctggtatcag	cagaagccag	gccagtcccc tgtattggtc 540
atctatgacg	ataccagcg	gccctcaggg	atccctgagc	gattctctgg ctccaactct 600
gggaacacag	ccactctgac	catcagcggg	accaggcta	tggatgaggc tgactattac 660
tgtcaggcgt	gggacagcag	cttcgtattc	ggcggaggga	ccaaggtcac cgtcctaggt 720
gcggccgcac	atcaccatca	ccatcac		747

<210> 26

<211> 249

<212> PRT

<213> Homo sapiens

<400> 26

Gln	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Lys	Lys	Pro	Gly	Ala
1				5					10					15	

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Ile Ile Asn Pro Ser Gly Gly Ser Thr Ser Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Glu Asn Trp Gly Phe Asp Pro Trp Gly Gln Gly Thr Leu
100 105 110

Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
115 120 125

Gly Gly Gly Ser Ala Leu Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val
130 135 140

Ser Val Ser Pro Gly Gln Thr Ala Ser Ile Thr Cys Ser Gly His Ala
145 150 155 160

Leu Gly Asp Lys Phe Val Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ser
165 170 175

Pro Val Leu Val Ile Tyr Asp Asp Thr Gln Arg Pro Ser Gly Ile Pro
180 185 190

Glu Arg Phe Ser Gly Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile
195 200 205

Ser Gly Thr Gln Ala Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp
210 215 220

Asp Ser Ser Phe Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu Gly
225 230 235 240

Ala Ala Ala His His His His His His

245

<210> 27

<211> 351

<212> DNA

<213> Homo sapiens

<400> 27

```

caggtgcagc tgggtgcaatc tggggctgag gtgaagaagc ctggggcctc agtgaagggt      60
tcttgcaagg catctggata caccttcacc agctactata tgcactgggt gcgacaggcc      120
cctggacaag ggcttgagtg gatgggaata atcaacccta gtggtggtag cacaagctac      180
gcacagaagt tccagggcag agtcaccatg accagggaca cgtccacgag cacagtctac      240
atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gagagacgag      300
aactgggggt tcgaccctg gggccaggga accctggtca ccgtctcgag t                  351

```

<210> 28

<211> 117

<212> PRT

<213> Homo sapiens

<400> 28

```

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1           5           10           15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
          20           25           30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
          35           40           45

Gly Ile Ile Asn Pro Ser Gly Gly Ser Thr Ser Tyr Ala Gln Lys Phe
          50           55           60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr
65           70           75           80

```

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Glu Asn Trp Gly Phe Asp Pro Trp Gly Gln Gly Thr Leu
100 105 110

Val Thr Val Ser Ser
115

<210> 29

<211> 315

<212> DNA

<213> Homo sapiens

<400> 29
tcctatgagc tgactcagcc accctcagtg tccgtgtctc caggacagac agccagcatt 60
acctgctctg gacatgcact gggggacaaa tttgtttcct ggtatcagca gaagccaggc 120
cagtcccctg tattggatcat ctatgacgat acccagcggc cctcagggat ccctgagcga 180
ttctctggct ccaactctgg gaacacagcc actctgacca tcagcgggac ccaggctatg 240
gatgaggctg actattactg tcaggcgtgg gacagcagct tcgtattcgg cggagggacc 300
aaggtcaccg tccta 315

<210> 30

<211> 105

<212> PRT

<213> Homo sapiens

<400> 30

Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln
1 5 10 15

Thr Ala Ser Ile Thr Cys Ser Gly His Ala Leu Gly Asp Lys Phe Val
20 25 30

Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Val Leu Val Ile Tyr
35 40 45

Asp Asp Thr Gln Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Asp Ser Ser Phe Val Phe
85 90 95

Gly Gly Gly Thr Lys Val Thr Val Leu
100 105

<210> 31

<211> 5

<212> PRT

<213> Homo sapiens

<400> 31

Ser Tyr Tyr Met His
1 5

<210> 32

<211> 17

<212> PRT

<213> Homo sapiens

<400> 32

Ile Ile Asn Pro Ser Gly Gly Ser Thr Ser Tyr Ala Gln Lys Phe Gln
1 5 10 15

Gly

<210> 33

<211> 8

<212> PRT

<213> Homo sapiens

<400> 33

Asp Glu Asn Trp Gly Phe Asp Pro
1 5

<210> 34

<211> 11

<212> PRT

<213> Homo sapiens

<400> 34

Ser Gly His Ala Leu Gly Asp Lys Phe Val Ser
1 5 10

<210> 35

<211> 7

<212> PRT

<213> Homo sapiens

<400> 35

Asp Asp Thr Gln Arg Pro Ser
1 5

<210> 36

<211> 7

<212> PRT

<213> Homo sapiens

<400> 36

Gln Ala Trp Asp Ser Ser Phe
1 5

<210> 37

<211> 5

<212> PRT

<213> Homo sapiens

<400> 37

Arg Tyr Val Ile Asn
1 5

<210> 38

<211> 17

<212> PRT

<213> Homo sapiens

<400> 38

Ala Ile Ser Val Thr Gly Gly Ser Thr Ala Tyr Ala Asp Ser Val Arg
1 5 10 15

Gly

<210> 39

<211> 12

<212> PRT

<213> Homo sapiens

<400> 39

Gly Gln Trp Glu Arg Gly Ser Tyr Tyr Phe Asp Tyr

1 5 10

<210> 40

<211> 14

<212> PRT

<213> Homo sapiens

<400> 40

Thr Gly Ser Ser Ser Asn Ile Gly Asp Gly Tyr Asp Val His
1 5 10

<210> 41

<211> 7

<212> PRT

<213> Homo sapiens

<400> 41

Gly Asn Ser His Arg Pro Ser
1 5

<210> 42

<211> 6

<212> PRT

<213> Homo sapiens

<400> 42

His Ser Tyr Asp Gly Ser
1 5

<210> 43

<211> 5

<212> PRT

<213> Homo sapiens

<400> 43

Ser Tyr Ala Met Ser
1 5

<210> 44

<211> 17

<212> PRT

<213> Homo sapiens

<400> 44

Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 45

<211> 15

<212> PRT

<213> Homo sapiens

<400> 45

Met Gly Pro Cys Thr Gly Gly Ser Cys Tyr Asp Thr Leu Gly Asn
1 5 10 15

<210> 46

<211> 14

<212> PRT

<213> Homo sapiens

<400> 46

Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly Tyr Asp Val His
1 5 10

<210> 47

<211> 7

<212> PRT

<213> Homo sapiens

<400> 47

Gly Asn Gly Asn Arg Pro Ser
1 5

<210> 48

<211> 12

<212> PRT

<213> Homo sapiens

<400> 48

Gln Ser Tyr Asp Ser Ser Leu Ser Gly Ser Lys Val
1 5 10

<210> 49

<211> 109

<212> PRT

<213> Homo sapiens

<400> 49

Asp Phe Gly Leu Asp Cys Asp Glu His Ser Thr Glu Ser Arg Cys Cys
1 5 10 15

Arg Tyr Pro Leu Thr Val Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile
20 25 30

Ile Ala Pro Lys Arg Tyr Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu
35 40 45

Phe Val Phe Leu Gln Lys Tyr Pro His Thr His Leu Val His Gln Ala
50 55 60

Asn Pro Arg Gly Ser Ala Gly Pro Cys Cys Thr Pro Thr Lys Met Ser
65 70 75 80

Pro Ile Asn Met Leu Tyr Phe Asn Gly Lys Glu Gln Ile Ile Tyr Gly
85 90 95

Lys Ile Pro Ala Met Val Val Asp Arg Cys Gly Cys Ser
100 105

<210> 50

<211> 320

<212> DNA

<213> Homo sapiens

<400> 50
gtcagcccaa ggctgcccc tcggtcactc tgttcccgcc ctctctgag gagcttcaag 60
ccaacaaggc cacactggtg tgtctcataa gtgacttcta cccgggagcc gtgacagtgg 120
cctggaaggc agatagcagc cccgtcaagg cgggagtgga gaccaccaca ccctccaaac 180
aaagcaacaa caagtacgcg gccagcagct atctgagcct gacgcctgag cagtgggaagt 240
cccacagaag ctacagctgc caggtcacgc atgaagggag caccgtggag aagacagtgg 300
cccctacaga atgttcatag 320

<210> 51

<211> 106

<212> PRT

<213> Homo sapiens

<400> 51

Gly Gln Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser

1	5	10	15
Glu Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp			
20	25	30	
Phe Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro			
35	40	45	
Val Lys Ala Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn			
50	55	60	
Lys Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys			
65	70	75	80
Ser His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val			
85	90	95	
Glu Lys Thr Val Ala Pro Thr Glu Cys Ser			
100	105		

<210> 52

<211> 992

<212> DNA

<213> Homo sapiens

<400> 52	
cctccaccaa gggcccatcg gtcttcccc tggcaccctc ctccaagagc acctctgggg	60
gcacagcggc cctgggctgc ctgggtcaagg actacttccc cgaaccgggtg acgggtgtcgt	120
ggaactcagg cgccctgacc agcggcgtgc acaccttccc ggctgtccta cagtcctcag	180
gactctactc cctcagcagc gtgggtgaccg tgccctccag cagcttgggc acccagacct	240
acatctgcaa cgtgaatcac aagcccagca acaccaaggt ggacaagaaa gttgagccca	300
aatcttgtga caaaactcac acatgcccac cgtgcccagc acctgaactc ctgggggggac	360
cgtcagtctt cctcttcccc ccaaaacca aggacaccct catgatctcc cggaccctg	420
aggtcacatg cgtgggtggtg gacgtgagcc acgaagacct tgaggtcaag ttcaactggt	480
acgtggacgg cgtggaggtg cataatgcca agacaaagcc gcgggaggag cagtacaaca	540
gcacgtaccg tgtgggtcagc gtcctcaccg tctgcacca ggactggctg aatggcaagg	600

agtacaagtg caaggtctcc aacaaagccc tcccagcccc catcgagaaa accatctcca 660
aagccaaagg gcagccccga gaaccacagg tgtacacctt gcccccatcc cgggaggaga 720
tgaccaagaa ccaggtcagc ctgacctgcc tgggtcaaagg cttctatccc agcgacatcg 780
ccgtggagtg ggagagcaat gggcagccgg agaacaacta caagaccacg cctcccgtgc 840
tggactccga cggctccttc ttctctata gcaagctcac cgtggacaag agcaggtggc 900
agcaggggaa cgtcttctca tgctccgtga tgcattgaggc tctgcacaac cactacacgc 960
agaagagcct ctccctgtcc ccgggtaaat ga 992

<210> 53

<211> 330

<212> PRT

<213> Homo Sapiens

<400> 53

Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
1 5 10 15

Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
50 55 60

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65 70 75 80

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
100 105 110

Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro

115	120	125
Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys		
130	135	140
Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp		
145	150	155 160
Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu		
165	170	175
Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu		
180	185	190
His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn		
195	200	205
Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly		
210	215	220
Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu		
225	230	235 240
Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr		
245	250	255
Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn		
260	265	270
Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe		
275	280	285
Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn		
290	295	300
Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr		
305	310	315 320
Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys		
325	330	

<210> 54

<211> 6

<212> PRT

<213> Any

<220>

<221> MISC_FEATURE

<222> (2)..(3)

<223> Any amino acid

<220>

<221> MISC_FEATURE

<222> (5)..(5)

<223> Any amino acid

<400> 54

Lys Xaa Xaa Pro Xaa Asn
1 5